

Work Order ID 158496***158496***

Page 1

Thursday, March 23, 2017 2:37:57 PM

Item ID: 647.3912

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Breakaway Tip Wirestrike for Wire Strike Kit

Start Date: 3/25/2017 Start Qty: 6.00

6

Cust Item ID:

Required Date: 4/7/2017 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals:

Process Plan:

DAS
21
9-89

Date: MAR 23 2017

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

647.3900

C2

100

0.00

100

BAND SAW

Bandsaw

Memo

0.00

Jeaspa Bandsaw

Cut Blank at 20.000"

*** ONE BLANK MAKES TWO PARTS***

DAS
33
9-89

17103/24

110

1.81

110

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

1.87

HAAS CNC vertical machine #1

1-Machine per folio FB309

DWG REV: C

FOLIO REV: AA

2- deburr and break all sharp edges

DAS
20
9-89

170408

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition				Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____																			

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Page 2

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Item ID: 647.3912

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Breakaway Tip Wirestrike for Wire Strike Kit

Start Date: 3/25/2017 Start Qty: 6.00

6

Cust Item ID:

Required Date: 4/7/2017 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00

120

QC

Memo

0.06

Quality Control

6

φ

DAS
20
9-89

17-04-08

130

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.12

Quality Control

D.A 17-04-09

6

φ

DAS
08
9-89

140

Outsource process-Anodize per QSI017 4.1.10.1

0.00

140

Outsource4

Memo

1,080.00

Outsource process - Anodize

Issue P/O to ATG : 36011

1- Black Anodize as per Dwg 647.3900

2- PRIME AS PER DWG, SEE NOTE #9

Certification of Comformity is required

6

APR 19 2017

DAS
13
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 158496

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Page 3

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Required Date: 4/7/2017 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.12							
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
155	3.0 mils thickness primer								
QC	Memo	0.12							
Quality Control									
180	Identify as per dwg & Stock Location	0.00							
180									
Packaging	Memo	0.06							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								

6x 8P7-5-11

6

MAY 11 2017

6 MAY 11 2017

DAS
38
9-88

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Work Order ID 158496

Thursday, March 23, 2017 2:37:57 PM

158496

Page 4

Item ID: 647.3912

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Breakaway Tip Wirestrike for Wire Strike Kit

Start Date: 3/25/2017 Start Qty: 6.00 ***6***

Cust Item ID:

Required Date: 4/7/2017 Req'd Qty: 6.00 ***6***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.60							
Quality Control									

17/5/15 JA

DAS
21
9-00

MAY 12 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause			FAULT CATEGORY							
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date ☐	☐	Manufacturing Process	OTHER : _____							
Misidentified ☐	☐	Past Due								

Picklist Print

Thursday, March 23, 2017 2:37:57 PM

Page 1

Work Order ID: 158496

158496

Parent Item: 647.3912

647 3912

Parent Item Name: Breakaway Tip Wirestrike for Wire Strike Kit

Start Date: 3/25/2017

Required Date: 4/7/2017

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV.A NEW ISSUE JFS 14/05/29 VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B0.375X6.000		Purchased	No			100	f	10.1700	0.834	5.267368		DAS	
M7075T6B0.375X6.000									**			33	
7075-T6 Plate 0.375" X 6.000", QQ-A 250/12											9-89		
												17/03/24	

Location

Loc Qty

Loc Code

MAT005

10.17

m135187

0.87

m136344

9.3

5.01

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO. 04948

SHEET 1 OF 2

DWG NO. 647.3900

REV: C

PREPARED BY: M. ANDECK

DATE: 05/04/15

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: DEFLECTORS

APPROVED BY:

ENGR

[Signature]

MFG

[Signature]

QC

[Signature]

EFF:

CURRENT ORDER

ECR:

D-15-01

REASON: REVISED TOLERANCE AND NOTES

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. *[Signature]*

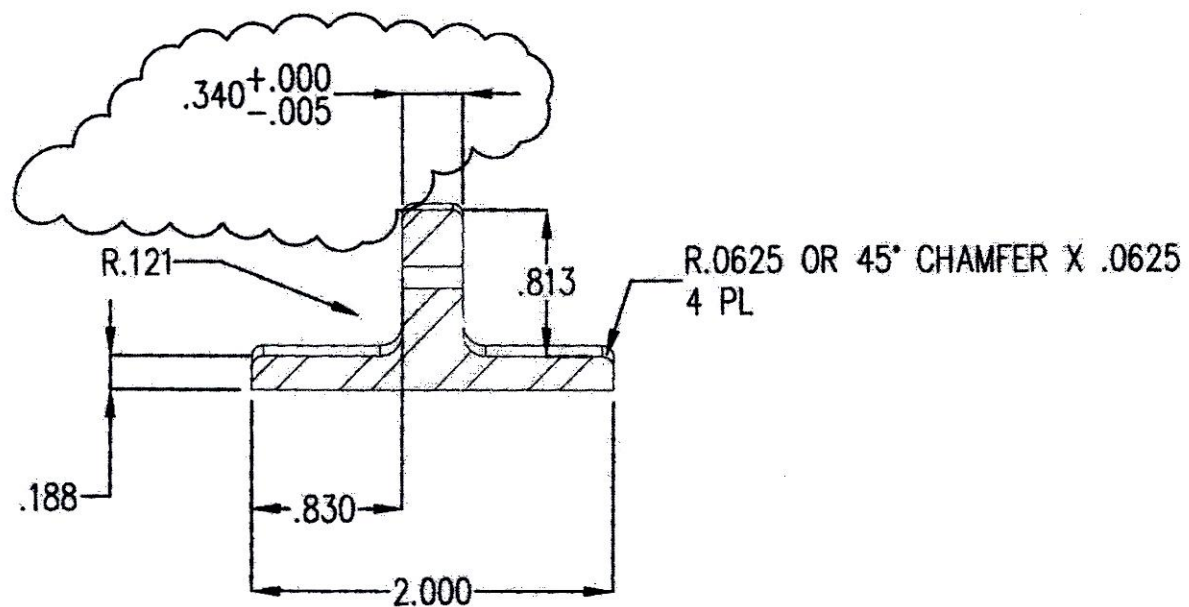
MAR 24 2017

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12.
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK;
3. DEBURR AND BREAK ALL SHARP EDGES.
4. IDENTIFY IAW MPP-120.
- 5 APPLY F/N 3 AS REQUIRED TO ALL FAYING SURFACES OF F/N 6, 7 & 8 UPON ASSY.
- 6 MAXIMUM OR MINIMUM DIMENSION AFTER FINISH.
7. .0625 HOLE MAY BE ADDED FOR FINISHING PURPOSES
- 8 FINISH: PRETREAT PR-148 ADHESION PROMOTER, PRIME IAW MIL-P-23377J, TYPE I, CLASS N; 1-2 MIL MAX. APPLY FINISH AFTER ASSEMBLY.
- 9 FINISH: PRETREAT PR-148 ADHESION PROMOTER, PRIME IAW MIL-P-23377J, TYPE I, CLASS N; 1-2 MIL MAX.
- 10 MATERIAL: ALUMINUM 2024-T3 PER AMS-QQ-A-250/4.

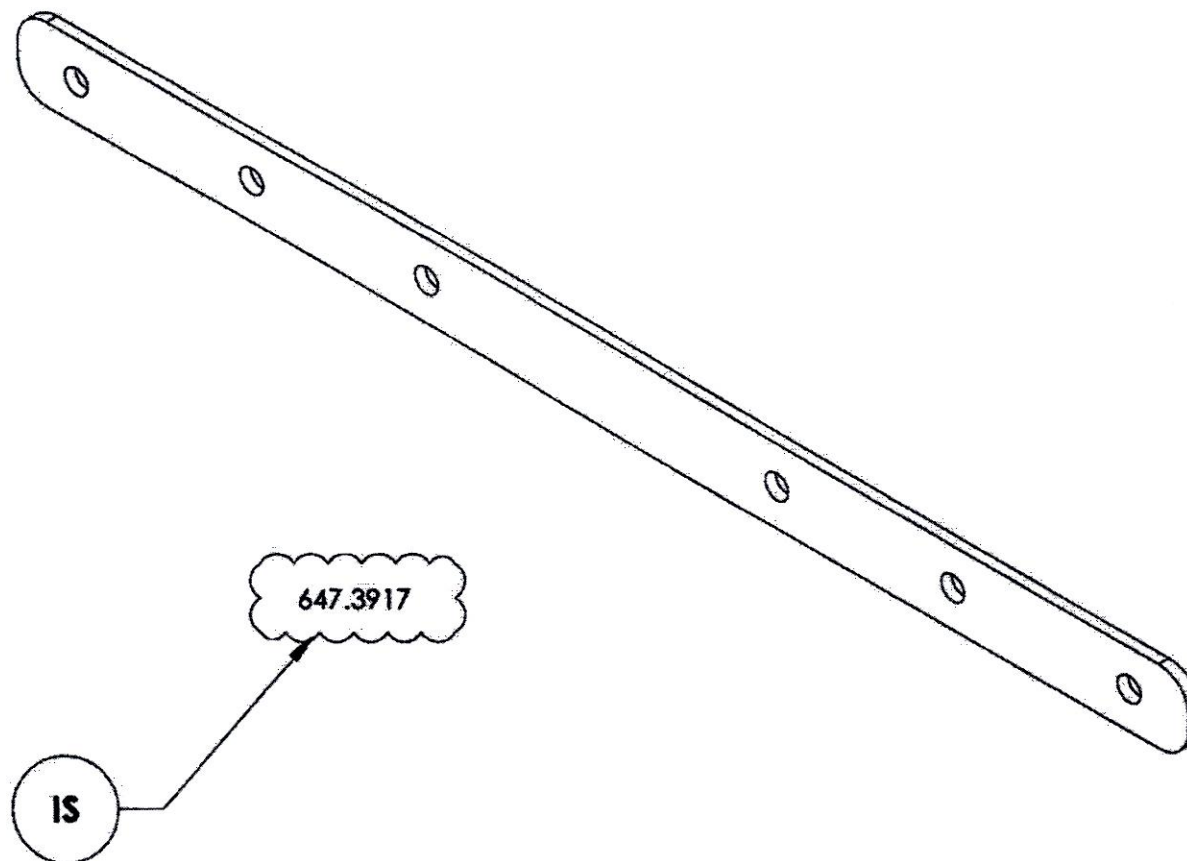
SHEET 1, ZONE B1 IS:

11	R	647.3917	2				DOUBLER		
F/N	TC	PART NUMBER	.3903	.3902	.3901		DESCRIPTION	MATERIAL	SPECIFICATION
			QTY						
DOCUMENTS EFFECTED:							CHANGE CATEGORY	DER REVIEW REQUIRED	
☐ PATTERN ☐ MDL ☐ INSTALL INSTRU ☐ ICA ☒ BOM							☐ MAJOR ☒ MINOR	☐ YES ☒ NO	



SECTION AT-AT

SHEET 11, ZONE C1 IS:

SHEET 12, ZONE B5 IS:

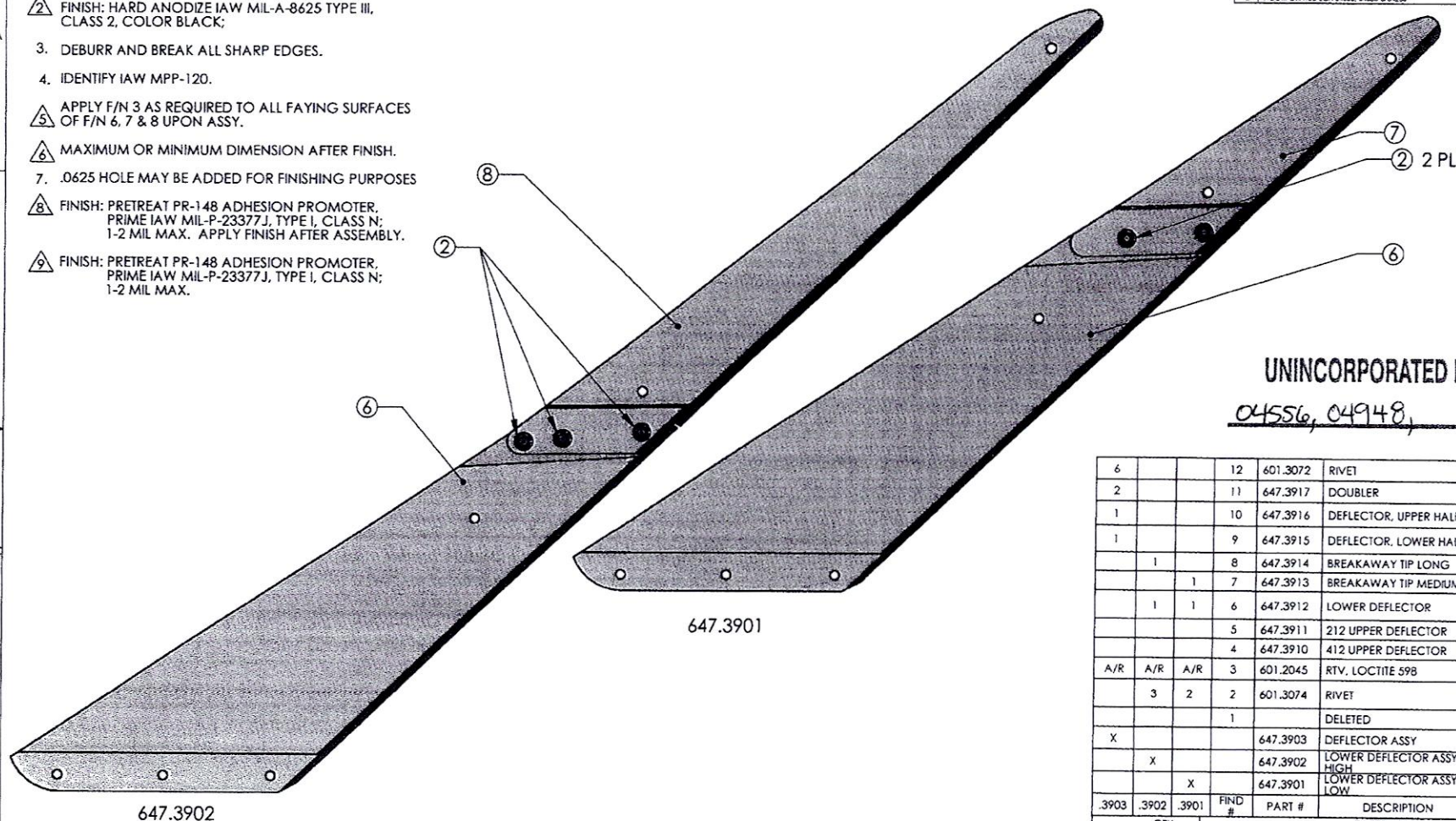
1 2 3 4 5 6 7 8

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NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12.
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK;
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
N/C	LAST PROTOTYPE RELEASE-PRI		N/C
N/C	INITIAL RELEASE	09/10/09	P. BRAVO
A	INCORPORATED ECN 0284, 0339 & 0359	07/24/12	P. BRAVO
B	INCORPORATED ECN 0405	08/07/13	P. BRAVO
C	INCORPORATED ECN 0406, 0408 & 0450	11/18/13	P. BRAVO



UNINCORPORATED ECN(s)

04556, 04948,

6		12	601.3072	RIVET	CR3213-6-9	
2		11	647.3917	DOUBLER		
1		10	647.3916	DEFLECTOR, UPPER HALF	△	△
1		9	647.3915	DEFLECTOR, LOWER HALF	△	△
	1	8	647.3914	BREAKAWAY TIP LONG	△	△△
		7	647.3913	BREAKAWAY TIP MEDIUM	△	△△
	1	6	647.3912	LOWER DEFLECTOR	△	△△
		5	647.3911	212 UPPER DEFLECTOR	△	△△
		4	647.3910	412 UPPER DEFLECTOR	△	△△
A/R	A/R	3	601.2045	RTV, LOCTITE 598		△
	3	2	601.3074	RIVET	MS20470AD 6-12	
		1		DELETED		
X			647.3903	DEFLECTOR ASSY		△
	X		647.3902	LOWER DEFLECTOR ASSY HIGH		
		X	647.3901	LOWER DEFLECTOR ASSY LOW		
.3903	.3902	.3901	FIND #	PART #	DESCRIPTION	MAT'L SPEC
QTY				PARTS LIST		
NEXT ASSY (S)				ORIGINAL DATE		
647.3800				DRAWN BY		
				CHECKED		
				DESIGNED		
				DRAWING APPROVAL		
				P. BRAVO		
				DATE		
				CONTRACT NO.		
				UNLESS OTHERWISE SPECIFIED		
				DIMENSIONS ARE IN INCHES		
				TOLERANCES ARE:		
				2 PLACE DECIMALS ±.01		
				3 PLACE DECIMALS ±.005		
				ANGLES ±.5°		
				SHEET 1 OF 12		

APICAL INDUSTRIES

2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

DEFLECTORS

SHEET 1 OF 12
DWG. NO. 647.3900
REV. C
SCALE NONE

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.125 X 45.0° TYP

SECTION B-B

Ø.177 THRU 3PL

.266 X 17.9°

.045

.603

R.915

.923

2.110±.002

4.220±.002

DETAIL A

R.279

R3.406

15.896

15.304

15.046

B

B

Ø.189

6.446

40.2°

.312

0

18.502
18.127

35.8°

10.702
8.599

6.253

1.700

.777

0

.700

.035 X 45.0° TYP

.340^{+.000}
-.002

6 .346 MAX

DETAIL C

.375

15.896

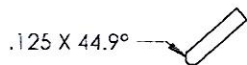
647.3911

ORIGINAL DATE
02-10-09
DRAWN BY
J. SCHUR
CHECKED BY
D. BARRETT
DRAWING APPROVAL
P. BRAVO
DATE
CONTRACT NO.

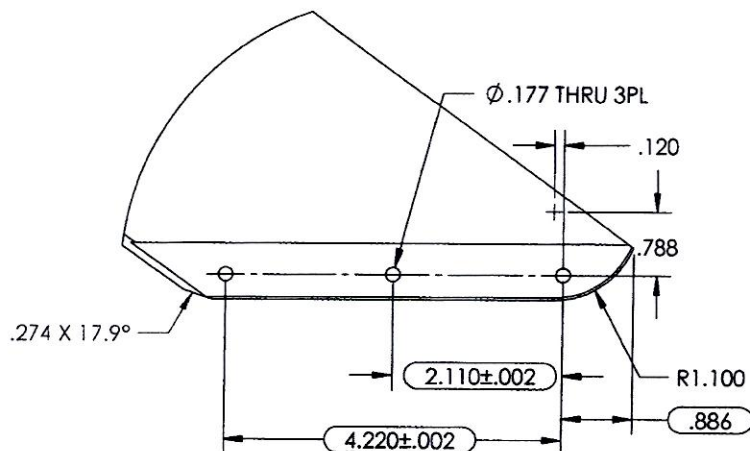
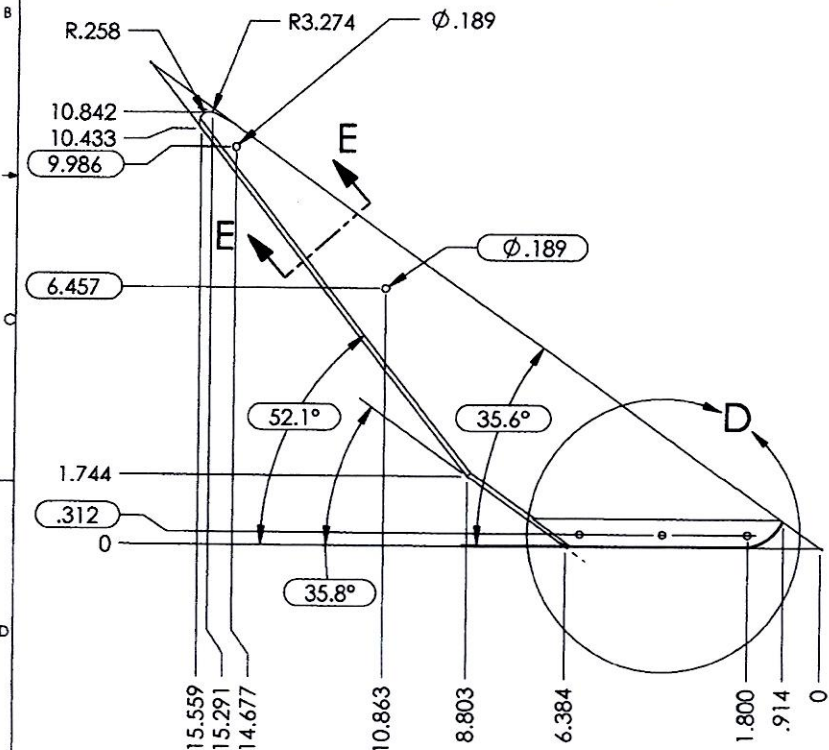
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.005
ANGLES ±.5°

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760) 724-5300
DEFLECTORS
SIZE CAGE CODE DWG. NO. REV.
B 07M26 647.3900 C
SCALE NONE SHEET 2 OF 12

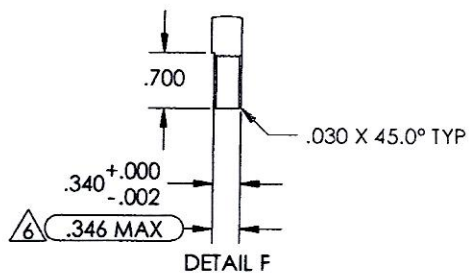
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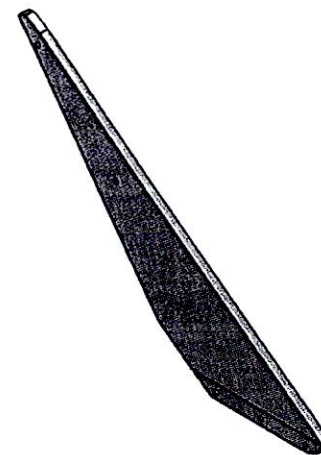
SECTION E-E



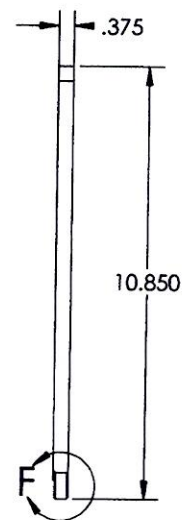
DETAIL D



DETAIL F

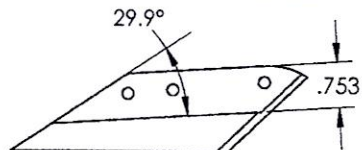


647.3910

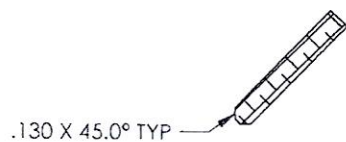


ORIGINAL DATE 2000-04-10		DWG. NO.	
DRAWN BY D. SCHUR		CHECKED D. BARBER	
DRAWING APPROVAL P. BRAYO		CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1. PLACE DECIMALS ±.01 2. PLACE DECIMALS ±.005 3. ANGLES ± 5°		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
SHEET B	CAGE CODE 07M26	DWG. NO. 647.3900	REV C
SCALE: NONE		SHEET 3 OF 12	

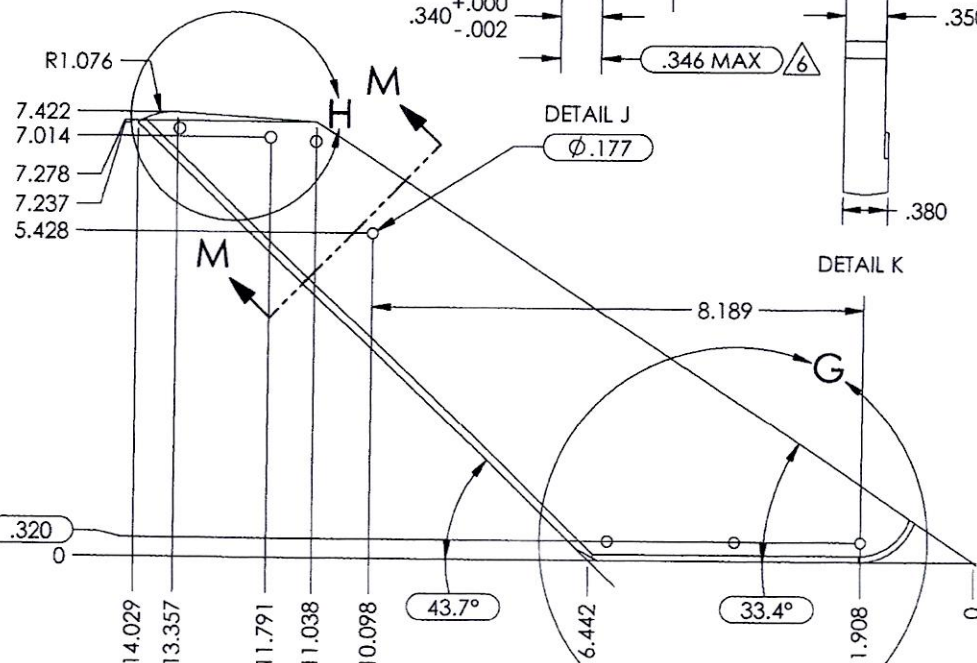
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SECTION L-L



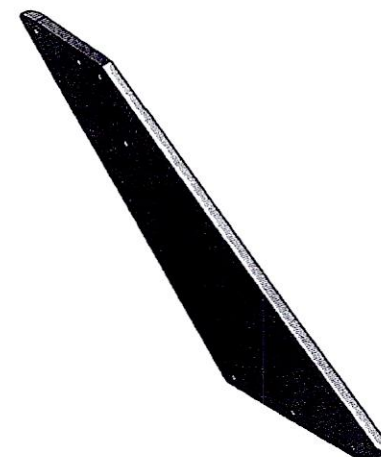
SECTION M-M



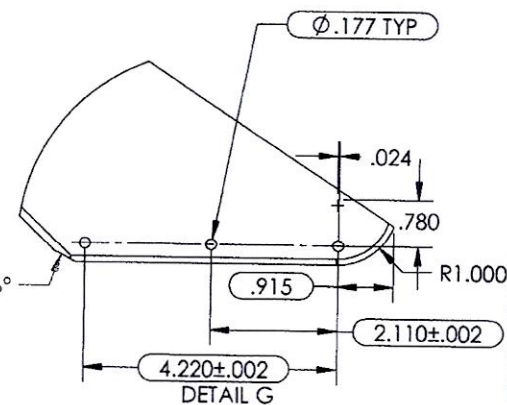
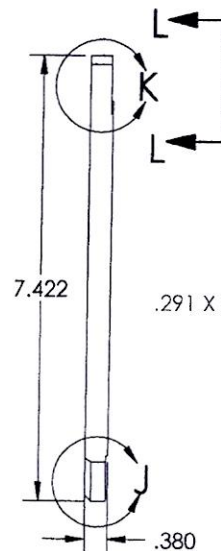
DETAIL J
Ø.177

DETAIL K

DETAIL H



647.3912



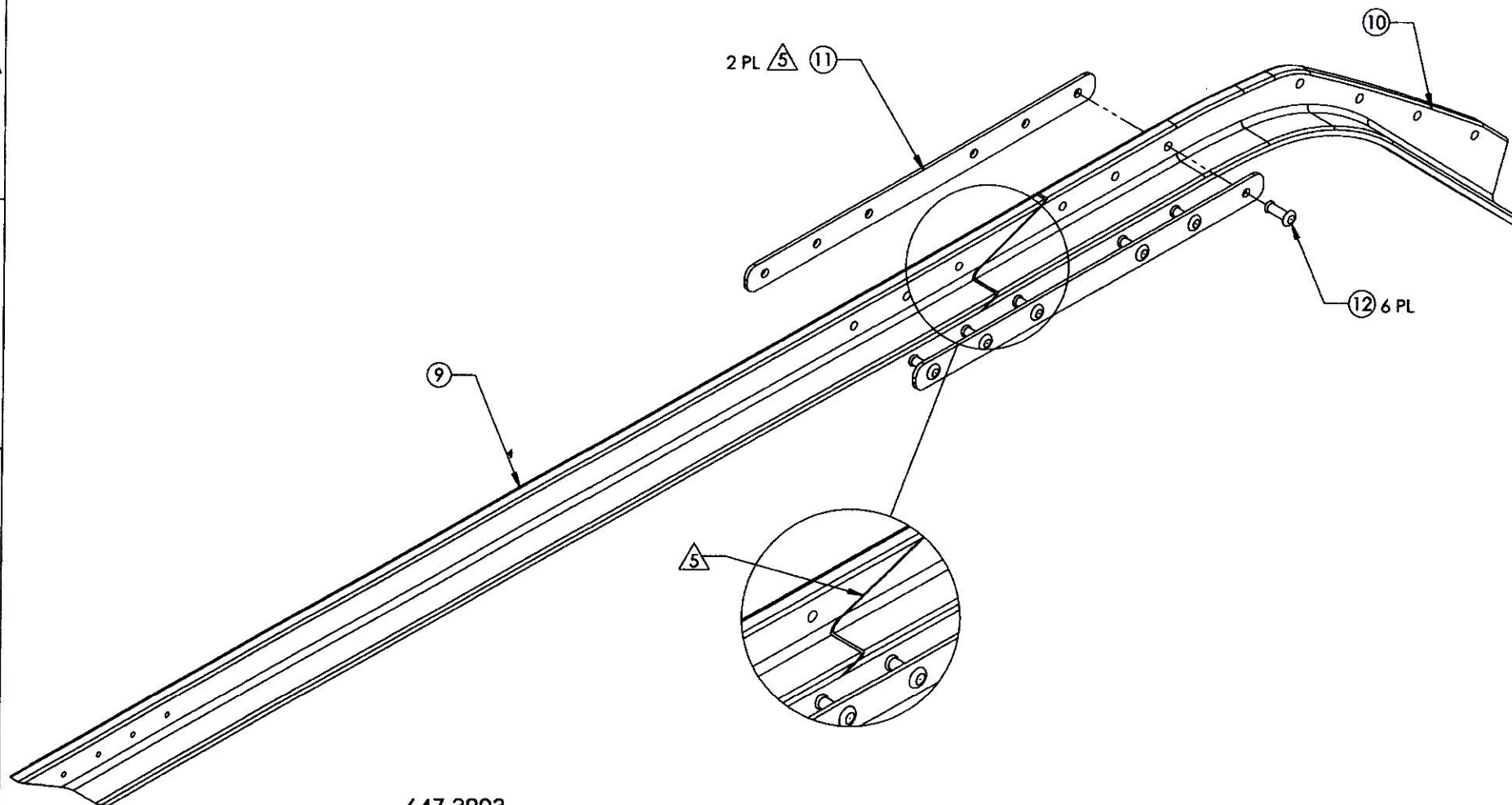
ORIGINAL DATE (MO-DA-YR) 09-10-09		APICAL INDUSTRIES	
DRAWN BY: J. SCHUR		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: J. BARBER		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAY		DEFLECTORS	
CONTRACT NO.		SCALE NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		SHEET 4 OF 12	REV C

ORIGINAL DATE (MO-DA-YR)	08-10-00	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA 92056-3512 (760)724-5300
DRAWING BY	CDICKER	
DISCUSS BY	JDARKER	
DRAWING APPROVAL BY	08-10-00	
CONTRACT NO.		DEFLECTORS
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.005 3 PLACE DECIMALS ±.001 ANGLES ±.5°		
SIZE B	CAGE CODE DT7M26	
DWG NO 647.3900		REV C
SCALE NONE		SHEET 5 OF 11

ORIGINAL DATE (MM-DD-YY) 09-12-01 DRAWN BY T. CRECHER D. SCHUR DRAWING APPROVAL P. BRAVO 09-12-01 CONTRACT NO.	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA 92056-3512 (760)724-5300		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°	SIZE 07M26	DWG. NO. 647.3900	REV C
	SCALE NONE	SHEET 6	OF 12

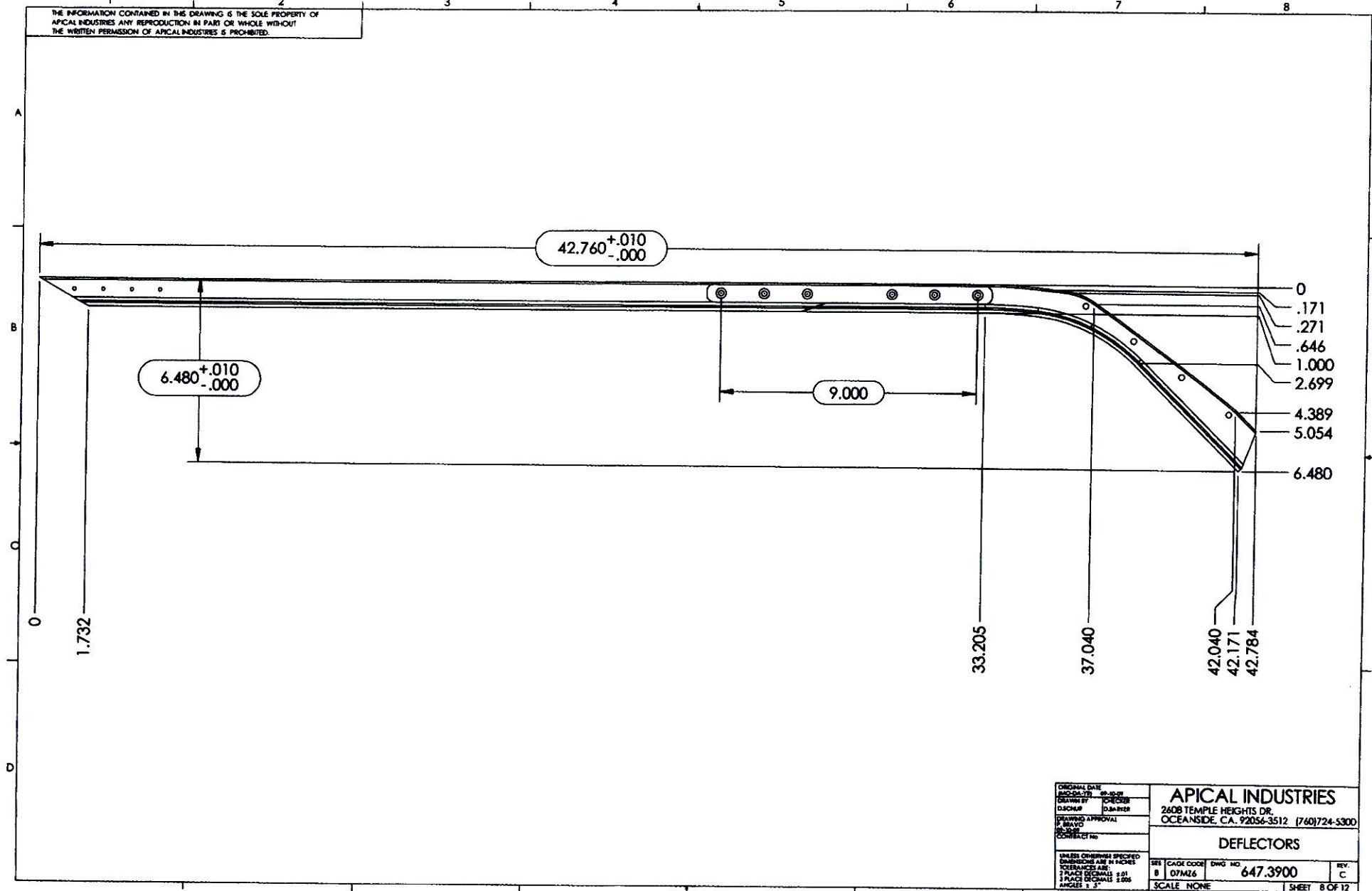
1 2 3 4 5 6 7 8

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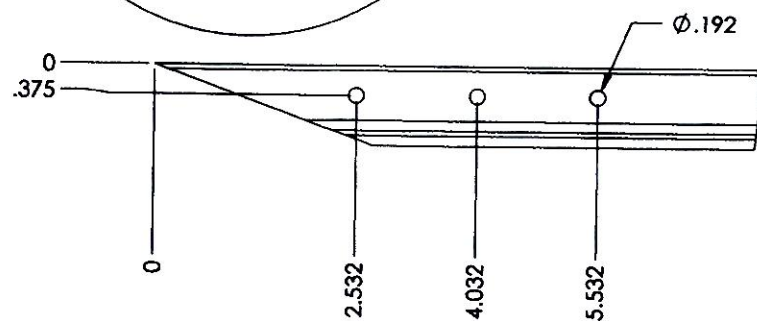
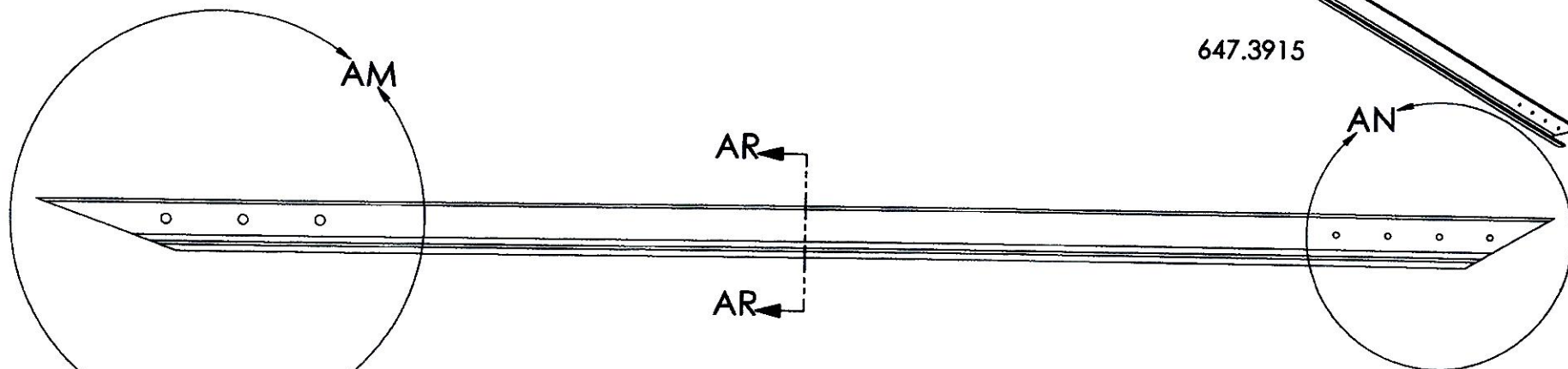
ORIGINAL DATE 15-03-1981 09:30:00		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY D. SCHUP		CHECKER D. BAKER	
DRAWING APPROVAL P. BAYNO		REV. C	
CONTRACT NO.		SCALE NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS .001 3 PLACE DECIMALS .005 ANGLES ± .5°		SHEET 7 OF 12	

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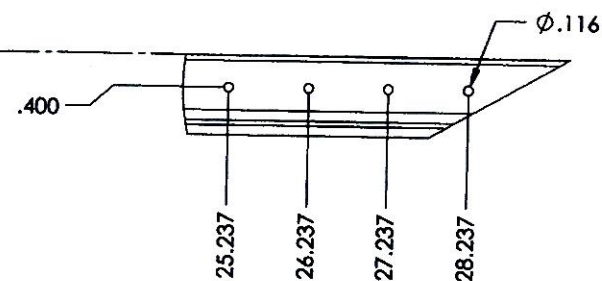


ORIGINAL DATE 8/20/2018		APICAL INDUSTRIES	
DRAWN BY D. CHASE		2608 TEMPLE HEIGHTS DR.	
CHECKED BY D. CHASE		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BAIRD		DEFLECTORS	
CONTRACT NO.		DWG NO. 647.3900	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		REV. C	SHEET 8 OF 12
TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SCALE NONE	

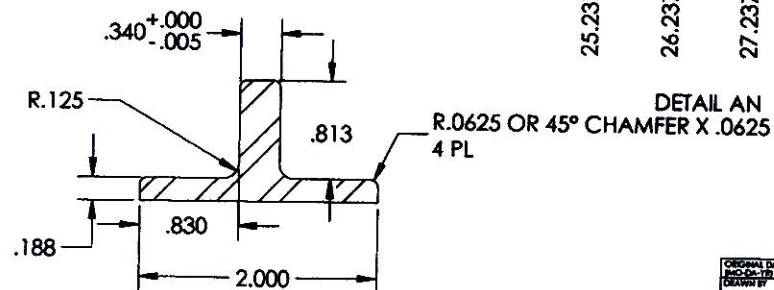
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DETAIL AM



DETAIL AN



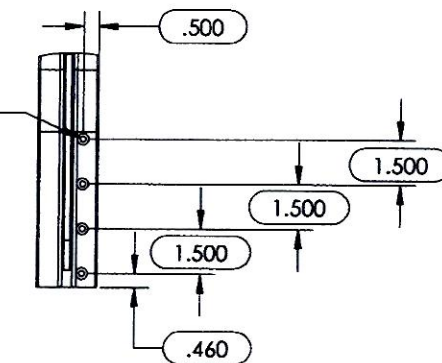
SECTION AR-AR

ORIGINAL DATE 10-20-09		APICAL INDUSTRIES	
DESIGNED BY D. BARNER		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL S. BARNER		DEFLECTORS	
CONTRACT NO.		SCALE NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.2°		REV. C	SHEET 9 OF 12

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4X $\phi .196 \pm .010$ THRU ALL
✓ $\phi .385 \pm .020 \times 100^\circ \pm 1.000^\circ$

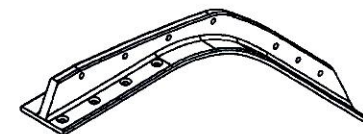


DETAIL AK

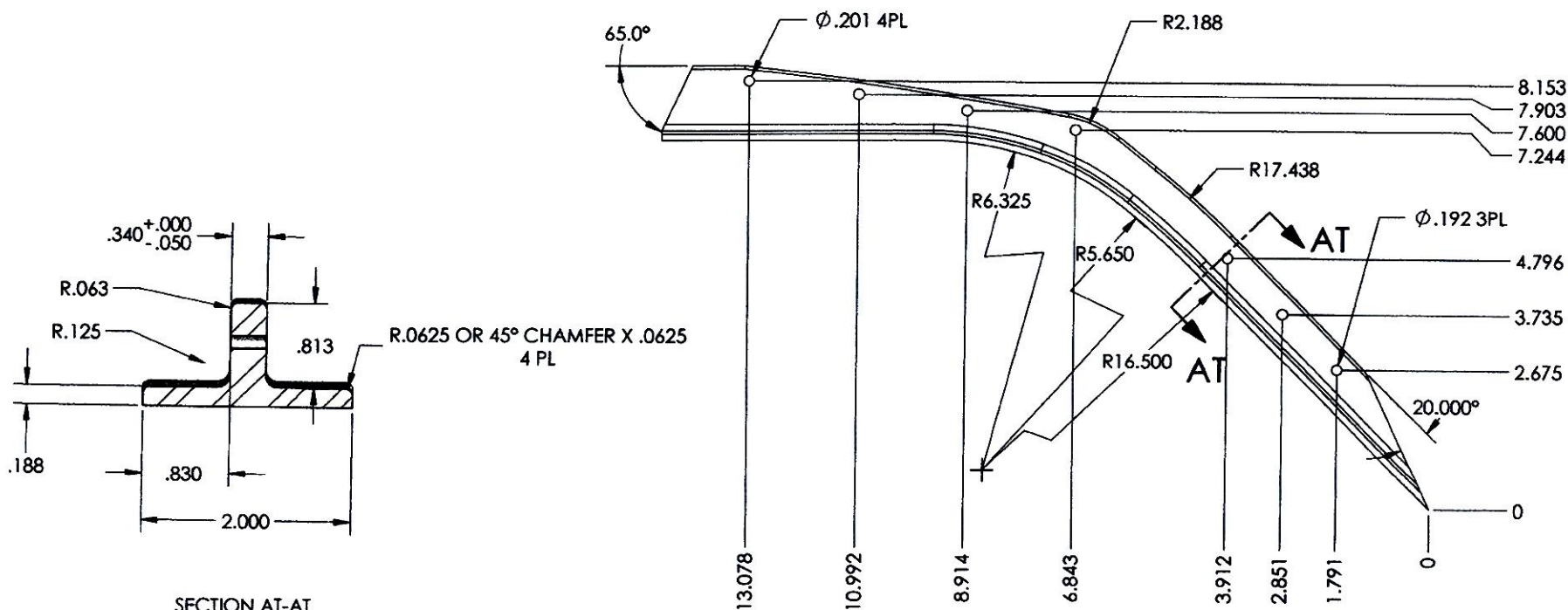
647.3915

ORIGINAL DATE 14-01-1981 09:10:00		APICAL INDUSTRIES	
DRAWN BY D.SCHUR		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY D.BARNER		DEFLECTORS	
DRAWING APPROVAL P. BRAYO		REV	
DATE 06-10-87		C	
CONTRACT NO.		647.3900	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE 1 PLACE DECIMALS $\pm .01$ 2 PLACE DECIMALS $\pm .002$ ANGLES $\pm .5^\circ$		SHEET 8	SCALE NONE
		SHEET 10 OF 12	

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647.3916



SECTION AT-AT

ORIGINAL DATE 05-04-1981	BY: JCB
DRAWN BY: D.SCHUR	CHECKED: D.BANKER
DRAWING APPROVAL J. BRAY	DATE: 05-30-81
CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 7 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°	
SHEET	CAGE CODE
B	07M16
DWG. NO.	
647.3900	
REV. C	
SCALE: NONE	
SHEET 11 OF 12	

APICAL INDUSTRIES

2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92054-3512 (760)724-5300

DEFLECTORS

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R.250
4 PL

.625

0

.500

2.000

3.500

6.500

8.000

9.500

10.000

647.9317

.090

Ø.196
6 PL

ORIGINAL DATE
DWG. NO. 07-10-09
DRAWN BY
CHECKED
USCHER
DESIGNED
DRAWING APPROVAL
BY
DATE
CORRECTION NO.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.005
ANGLES ±.5°

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

DEFLECTORS

REV	DATE	BY	DESCRIPTION
8	07M26		
SCALE: NONE		DWG. NO. 647.3900	REV C
		SHEET 12 OF 12	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO36011**

Purchase Order Date 4/19/2017

PO Print Date 4/25/2017

Page Number 1 of 5

Order From :

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

VC-ATG001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 613-446-4544

Ship To Contact

Ship To Phone

Ship Via: VENDOR'S TRUCK

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	158812	647.7611 LOWER DEFLECTOR REV. N/C	4/25/2017 Yes 4/25/2017		4.00	\$12.05	\$48.20
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							
Line Total:							\$48.20
2	158496	647.3912 BREAKAWAY TIP REV. C	5/5/2017 Yes 5/5/2017		6.00	\$11.45	\$68.70
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							
Line Total:							\$68.70
3	158883	647.3912 BREAKAWAY TIP REV. C	5/5/2017 Yes 5/5/2017		6.00	\$11.45	\$68.70
FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377 TYPE I CLASS N							

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

4/25/2017



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913270

Date: 05-May-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
		OUR TRUCK	
Quantity	Description		
	Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.		
3 ea	Part: D5354-042 R66 Clamp Black Anodize per MIL-A-8625F, Type II, Class 2 Job: 20964	Rev: C PO: PO36011	Line: 10
6 ea	Part: D5355-041 Aft Clamp Black Anodize per MIL-A-8625F, Type II, Class 2 Job: 20965	Rev: C PO: PO36011	Line: 11
8 ea	Part: 647.7910 Angle bracket Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Job: 20966	Rev: N/C PO: PO36011	Line: 12
1 ea	Part: ADMINISTRATION FEE Administrative Fee Job: 20967	Rev: N/A PO: PO36011	Line: 13
6 ea	Part: 647.3912 Breakaway Tip Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied) Job: 20956	Rev: C PO: PO36011	Line: 2
6 ea	Part: 647.3912 Breakaway Tip Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied) Job: 20957	Rev: C PO: PO36011	Line: 3
6	Part: 647.3914	Rev: C	
Made in Canada.			



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913270

Date: 05-May-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via
		OUR TRUCK
Quantity	Description	
	Date: <u>05/05/2017</u> Certified Signature: <u>[Signature]</u> Receiver Signature: <u>SP 175-11</u> A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited. Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.	
Made in Canada.		